BYTE BACK

"ByteBack"

ISSUE 10 • 1994

MEMORY EDITOR
Part 2

PROCmem
Got spare memory? Find out how much is left for your program

LETTERS
Your views in abundance!

CHRISTMAS LIGHTS
A small program demonstrating a use for "palette cycling"

DISC INDEXER
A tidy front-end to your home-brewed discs!

MERRY CHRISTMAS!

What will Santa be bringing you this Christmas?!!

1995 HERE WE COME

ByteBack is here to welcome the New Year in!!

Hello again. I am pleased to say that Christmas is here... and so is ByteBack! In this issue you should find part two of Andrew's Memory Editor, the concluding part I might add, hence the three solid pages of listing. There is also a simple program that uses 'palette cycling' to produce an 'animated' display of moving Christmas lights – short to input, quick to see results. I hope VIEW users found the supplement in the last issue useful. I have had to delay part two until the next issue: beating Christmas was enough for me to work to! With the two, you should be able to make a start with that trusty word processor. The series on the Acorn range is nearing completion and the first of these supplements will be in an issue of BB coming to your front door soon!

I hope you don't mind but I thought that a few sprigs of holly and balloons would brighten up this Christmas issue! And, as this is the Christmas issue, I have taken extra steps to produce a colourful front cover. Whilst the membership of ByteBack remains below 100, it is (relatively) easy to put together 'special' touches like the colour on the cover – for special occasions that is.

I receive letters from members, asking to see "more or..." this and that, more Reader's Letters, more Classifieds, and so on. I would just like to mention that any subject that isn't covered by BB anymore is not because I get bored of putting it in or any other reason, other than shortage of that kind of information. By this I mean I can only put in Reader's Letters when Readers write to me! The same goes for Classified adverts: I can only put in items that people are selling! I know this seems fairly obvious, but I thought I should let you know. I am interested in seeing all BBC-related subject covered in BB, and whatever I have, or whatever is sent to me, will find its way in here somewhere, eventually.

While I have been considering what to do with ByteBack during the last few months (in terms of size and frequency of production, etc), office purchases have left me with a 'spare' laser printer at home, to compliment the 'spare' monitor and keyboard. These items are used when my computer is taken home work, on odd evenings. It also means that I can work on ByteBack, *and* print it out whenever I like. I hope this will contribute to making the production of BB easier and quicker.

Speaking of members, in the New Year I will endeavour to make ByteBack better known to the community, by way of advertising. This will help increase the variety of content as more people 'climb on board' and offer their thoughts and knowledge to BB. Happy New Year to you!

Paul

CE INDEXER PROGRAM

A disc index program from Frank Iveson. (Why the "CE" Frank?...)

Often a diskette will contain numerous programs, each bearing a peculiar 7-letter name which, with the passage of time, becomes meaningless. This program will allow you to give your programs more meaningful titles and allow you to call them by simply entering a number. The programs can also be modified such that on ending, the menu Indexer will be re-chained and again displayed.

Having typed in the program, and proved it, (noting that the entry of 20 will cause a 'quit'), simply press function key 8 to list the program then enter the name of the program against the appropriate CHAIN position (at the same time deleting the 'GOTO 130 : REM' comments), and enter the program title in the corresponding DATA name position.

```
10REM      INDEXER
20REM - MENUing program -
30REM    Frank Iveson
40REM  26 April 1994
50*KEY8 MO.3|MINIML.|M
60VDU22,7
70*FX 200,1
80FOR R=1 TO 2·PRINTTAB(11,R)CHR$(13
1);CHR$(141);"PROGRAM INDEX":NEXT
90R=3:FOR S=1 TO 10:IF S=10 PRINTTAB
(0,R)CHR$(133);S;"." ELSE PRINTTAB(1
,R)CHR$(133);S;".":R=R+2:NEXT
100R=3:FOR S=11 TO
20.PRINTTAB(20,R)
CHR$(133),S;".".R=R+2·NEXT
110FOR S=1 TO 10.READ name$.PRINTTA
B(4,2*S+1)CHR$(134);name$:NEXT
120FOR S=1 TO 10·READ name$.PRINTTA
B(24,2*S+1)CHR$(134);name$.NEXT
130PRINTTAB(0,23)STRING$(39," ")
140PRINTTAB(5,23);"Enter the number
wanted: ";
150INPUT N
160IF N<1 OR N>20 THEN 130
170*FX 200,0
180ON N GOTO 190,200,210,220,230,240
,250,260,270,280,290,300,310,320,330
,340,350,360,370,380
190GOTO 130 ·REM CHAIN "prog 1"
200GOTO 130 :REN CHAIN "prog 2"
210GOTO 130 .REM CHAIN "prog 3"
220GOTO 130 :REM CHAIN "prog 4"
230GOTO 130 .REM CHAIN "prog 5"
240GOTO 130  REM CHAIN "prog 6"
250GOTO 130 :REM CHAIN "prog 7"
260GOTO 130 ·REN CHAIN "prog 8"
270GOTO 130 ·REM CHAIN "prog 9"
280GOTO 130 ·REM CHAIN "prog 10"
290GOTO 130  REN CHAIN "prog 11"
300GOTO 130 .REM CNAIN "prog 12"
310GOTO 130 :REN CHAIN "prog 13"
320GOTO 130 ·REN CHAIN "prog 14"
330GOTO 130 .REM CHAIN "prog 15"
340GOTO 130 .REM CHAIN "prog 16"
350GOTO 130  REM CHAIN "prog 17"
360GOTO 130 .REM CHAIN "prog 18"
370GOTO 130 :REM CHAIN "prog 19"
380CLS:END
390DATA name 1,name 2
400DATA name 3,name 4
410DATA name 5,name 6
420DATA name 7,name 8
430DATA name 9,name 10
440DATA name 11,name 12
450DATA name 13,name 14
460DATA name 15,name 16
470DATA name 17,name 18
480DATA name 19,Quit
```

LETTERS

Write Back to ByteBack! (OK, crap joke, I know...)

Many thanks for numbers 6 & 7 of ByteBack. The new format should help you get them out quicker. I hope you can still continue the "Replacement Software Manual" series you started in 5 & 6 for InterWord.

Stan Doran, Blackpool

The "Replacement Software Manual", as you have now coined it, should continue for a while to come. I still have a large selection of manuals for BBC software I own. If any member has a preference for a RSM series, please let me know. After the present View series finishes, and straight after the 'BBC History' group, next on the list is Inter-Base, a Database ROM worthy of a mention, and a good companion to Inter-Word.

Thank you for issue 7 of ByteBack. I am sure like some other people I had begun to wonder what was going on. Perhaps the Editor was fleeing the country with the millions of pounds of subscriptions he had secured! I do think that if the magazine is to keep all its loyal readers, it is imperative that they are served reasonable often, certainly no more than 2 months between issues. Therefore cutting BB down to a 1 A3 size will be the best option. Maybe when time allows an extra sheet 'pull-out special' could be printed with any extra material not used. The content of issue 7 proved to be fairly balanced and interesting throughout, although I would prefer more space allocated for the letters section which I often think is one of the best parts of any computer magazine.

All the best.

John Sampson, Leeds, BB

As mentioned in the Editorial, the quantity of Letters and Classifieds that make it into ByteBack is directly proportional to the quantity I receive! With Letters, it appears to happen in two stages: a batch of to the Editor' letters arrive, most of which are suitable for publication; then I receive a batch of 'to Paul', normally unrelated to ByteBack or the BBC in any big way. This last group of letters is great for me to read, but can't be included in BB. Virtually every letter I receive with BBC 'morsels' is fitted into a ByteBack somewhere! As to the subject of 'Late BB', this is an ongoing saga that I have to deal with in each issue of BB! I apologise once again when an excessive delay crops up. I can only promise to try my best for each issue to get it out as soon as possible.

I had a BBC B computer but had to give up about 8 years ago when we moved. I have recently purchased a BBC B again and hope to use some of the old tapes which I kept. This machine has two 5¼" disc drives, so I am hoping to transfer some of my tapes to disc.

The first thing I did was to ring Beebug, only to find they were closing down at the end of that week (April 1994) but they did give me the name and address of your user group.

More Letters...

What I would like to acquire are the two games: Scrabble and Cribbage.

I also want an investment program for keeping a proposed portfolio of stocks & shares. I put an advertisement in the local paper, and bought ShareMaster together with the manual and the 'Dongle' plug to fit into the back of the machine. Unfortunately the two 5¼" discs had been stored in the front pocket of the manual and the metal arch has pressed a dent in each of the two discs. Either this, or perhaps some other corruption, makes it impossible to take a working copy of the discs. I can *CAT the master disc to get a list of 21 files, but only 5 of these will copy to another disc, even trying them individually. I get the message `Disc fault at 0A/03` (or similar numbers) on the other 16 files. As for the other disc, *CAT shows one file only called CONVERT. Using the Toolkit-Plus-Rom, I can *LOOK at this, and as it is a Basic program, that should LIST it on screen without loading it. However, it does list as far as line 3140 and then gives a `Disc fault 18 at 01/00`. From the manual I could see that ShareMaster had been written by Synergy Software, so I asked them if they could supply a new one. Unfortunately, as the BEEB is now obsolete they do not have it in their records any more.

If any of your members have ShareMaster and its Dongle which they no longer use, I would be happy to buy it from them (provided it is usable, of course!) Alternatively, does anyone have a method of reading off the corrupt disc to retrieve the situation? I would be most grateful. Perhaps there is another investment program out there somewhere (not a game) which keeps share records and draws graphs?

Mrs. D.M. Graham.

Thank you very much for sending back issues 4 & 5 of ByteBack. I am amazed that there are still useful simple hints & trps appearing that I have never come across before. The following information may be useful additions to what has already appeared.

* Single colour printer ribbons in RED, GREEN, BLUE, BROWN, BLACK are advertised in PCW by: **Dunning Computer Services 13c Sunrise Business Park BLANDFORD FORUM Dorset DT11 7TE. FAX: (01258) 480659 Tel: (01258) 480660**

* In Issue 5 Simon Godfrey asked about Viewdata BBS. He may be interested in: (0181) 759 2348 SILICON VILLAGE 1200/75 This was set up to try and replace the old Micronet. A free look can be obtained by using 4444444444 and 4444 as identity and password. Joining can be done on line.

* Norma Lee asked about getting hard copy from the screen. I don t know if she has received any help, but the usual most convenient method is to use some sort of screen dump ROM such as Dump Out 3 or Printmaster. It is possible to have a BASIC procedure such as BITPRINT2 which

appeared in the ACORN USER for November 1982. However this needs some modification depending on the horizontal bits/character of the printer. I did get it working for an Epson FX80, and also for a CTI CP80 at that time.

Cliff Blake, Portsmouth

Well done! ByteBack is back to normal, much better I know it was probably a lot more work? But it was worth it. Well that's my humble opinion anyhow. Right, to the gentleman, Bill Thornton from last issue of BB. I have no record of him at 8-Bit Software, which means he hasn't really tried PD software has he? Please direct Mr Thornton to 8BS asking him to send a formatted disc with return p&p and I would be pleased to send him further information. I put many hours of hard graft into the library and have sent out over 4000 discs (4490, I just checked) this year, with only a handful of problems and only 1 person that had so much bother with the software I had to give a refund. This problem was caused by ordering software without properly reading the 8BS catalogue.

Chris Richardson, 8BS, Hull

After reading Iss9 may I make a few points... In the tips I sent you about Model B repairs, there is an error which may have misled others. I quoted that changing the 6502A CPU (IC1) will sometimes cause the machine to fire up again and that the old CPU may work correctly in another machine. The article quoted that it may **NOT** work! The reason for this anomaly appears to be that the waveforms from a particular CPU may become too critical to drive the fan-out of following IC's. I have picked up several 6502C CPU's from various pieces of computer junk and although I cannot find any data on this version they appear to work fine in the Model B.

Finally, the problem with modifying Master programs to work on the Model B because of the lack of the ON x PROC... command. The suggestions to overcome this work OK but using GOTO lacks structure and in a lengthy program takes up many lines. I do not make a fetish of structuring but there is an easier way which subscribers to the now defunct BEEBUG magazine may remember. This uses dynamically called Functions using the EVAL command, with a dummy return value to satisfy the FN definition syntax it equates to a procedure!! Consider the Master command...

```
On J% PROCx, PROCy, PROCbyte, PROCz...
```

If J%=3, `PROCbyte` will be called.

Replace this with the command...

```
f=EVAL("FNproc+STR$(J%)")
```

['f' may be any dummy variable]

`PROCbyte` is now replaced by a function in the form...

```
100 DEF FNproc3: REM PROCbyte
110 PRINT "ByteBack"
120 =0
```

When J%=3 `FNproc3` will be called and similarly any other Function within the range allocated to J% will be called by this

single line. I have used this method to run the ASTAAD program, a lengthy CAD program described in the BEEBUG magazine for the Master computer. (The magazine said it could not be run on a Model B, but it can if Shadow RAM is fitted, and a number of small changes are made to the code). Using a Function still lackes a bit of clarity but allows each to be built and tested as for a Procedure and also reduces the complexity of some Master programs.

NL Smith, Staffordshire

Thanks for the latest issue of 'Byte Back'. I see that you have gone back to the previous format - why? Not that I mind one way or the other!

I have two main reasons for writing. The first is to ask - do you have a copy of the review of BBC support groups issued by 8BS that I could have a look at? I'd be interested in it in general & in particular to see what was said about ByteBack. I am thinking of subscribing to some additional Beeb groups, therefore I'd like to see what 8BS had to say on the subject. Don't worry I'm not going to defect to 8BS or another group!!

My second reason is to say "thanks" for publishing my last letter about my Beeb problems. BUT you missed out a few lines from the letter, consequently it doesn't make much sense !! That is, the middle bit of it should read...

'The second problem is a more recent one. Sometimes (usually!) when I start to print out a letter or something from InterWord (usually with 'marked text' e.g. my address) using my Juki daisy-wheel printer the first word of the text is not printed. In subsequent printings in the same session this problem doesn't seem to recur: do you know what's happening & why & what to do about it?' But it is printed as...

The second problem is a more recent one. Sometimes (usually !) when I start to print out a letter or something from InterWord (usually with 'marked text' e.g. my address) using my Juki daisywheel printer the first. . session this problem doesn't seem to recur: ...do you know what's happening & why & what to do about it?' Perhaps you could print a correction in a subsequent issue?

Best wishes & 'Happy Christmas' to you,

Sue Shawcross, BB034 - R2D2 - C3PO

...aargh! I think I've finally snapped!

I understand that you are an organisation which continues to work with and support the BBC computer. I have had a Model B for some years mainly for my children's benefit since they were using such at Primary School. I am finding an increasing dearth of sources of software and, more importantly, repair facilities. In particular at this time I have a problem in formatting new discs. A screen message appears `'Sector not found 00/00'`. I wonder if you would be kind enough to advise me of the services you have available and whether you can throw any light on this problem.

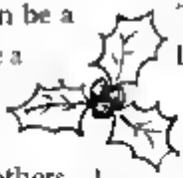
J Walker, Norfolk

CHRISTMAS LIGHTS

Psuedo animation, put to good use(?)

Animation on any computer can be a complicated business. There are a number of techniques for producing flicker-free graphics or moving images, some more successful than others, and most of them are complicated or long winded. Producers of cartoons will tell you that it's a lot of hard work for little return: two hours work may only produce two seconds of animated film. This is also true of computer animation. However, there is a technique, known as 'palette cycling', that can produce the effect of movement. Although it's not animation in the truest sense, it is still very effective.

The BBC Micro comes equipped with 16 colours in MODE 2 (8 true colours, 8 flashing colours). They can be accessed by the COLOUR command, followed by a number between 0 and 15. By default, the colours are organised as shown on p17 of this issue of BB, but any of the available colours can be allocated to any of the 'slots' 0-15. By this I mean COLOUR 2 could be changed from green to yellow, or blue or any other. If something is displayed on screen in COLOUR 2, it will appear in green. If we subsequently allocate COLOUR 2 to be yellow, anything on screen using COLOUR 2 will change to yellow.



Palette-cycling involves altering the colour values in such a way as to give the appearance of movement. The effect is similar to 'chasing lights' where the pattern of bulbs coming on and off fool the brain into thinking the light is actually moving.

Let's get into the program a little. It is set out in Procedures to make things clearer to understand:

```
10 REM Christmas Lights
20 REM ByteBack Issue Ten
30
40 MODE2
50 VDU23;8202;0;0;0;:REM hide cursor
60 PROCsetup: REPEAT
70 PROCdisplay_colour
80 PROCdisplay_white
90 PROCmoving_bulbs
100 PROCall_flash
110 UNTIL FALSE
```

First of all, the introduction lines and the calls to all of the PROCedures is entered.

```
790 DEFPROCsetup
800 VDU23,224,&3C,&18,&7E,&7E,&7E,
&3C,&3C,&18:REM define bulb colour
810 GCOL0,2:REM green
820 col%=9
830 VDU19,9,0,0,0,0
840 VDU19,10,0,0,0,0
850 VDU19,11,0,0,0,0
860 VDU19,12,0,0,0,0
870 VDU19,13,0,0,0,0
880 VDU19,14,0,0,0,0
```

Lines 830-880 set the Logical colours 9-14 to Actual colour black. The use of VDU 5 means that 'text' elements (characters from the keyboard or User-Defined Characters) can be placed at the Graphics

Cursor rather than the Text Cursor. This allows for more flexibility and scope. Because we are now dealing with graphics posrtioning, COLOUR has to be replaced with GCOL (Graphics COLour). It is essentrally the same as COLOUR, except that It works for graphics mstead ot text.

```
890 :
900 FOR L%=-10 TO 1280 STEP 100
910 MOVE L%,900:DRAW L%+33,860:DRAW
L%+66,860:DRAW L%+99,900:NEXT
920 :
930 VDU5:FOR L%=15 TO 1280 STEP 100
940 GCOL 0,col%
950 MOVE L%,850:VDU224
960 col%=col%+1:IF col%>14 col%=9
970 NEXT.VDU4
980 DIM bulb%(6):FOR L%=1 TO 6:bulb%
(L%)=L% NEXT bulb%(4)=7
990 DIM wbulb%(6):FOR L%=1 TO 5:wbulb
%(L%)=4 NEXT.wbulb%(6)=7
1000 ENDPROC
```

Green has been used foi the 'wires' of the lights, and all of the lights start off blue, that is 'off'.

Lines 950 and 960 draw the 'bulbs' In colours 9-14. At present they are all set to black, so on mitial display, they don't show up. Once the display is in place, the colours allocated to the 'bulbs' are set to different colours: (red, yellow, cyan, magenta, white), In a repeating pattern, until all bulbs are lit.

Once the display Is set up, it is simply a matter of altering the Actual colours of the Logical colours to produce the effect of moving lights. For this section of the program, there are four seperate PROCedures that alter the colours In different ways to give a variety of effects.

```
120 DEFPROCmoving_bulbs
130 :
140 REM move left
150 count%=0: REPEAT count%=count%+1
160 FOR L%=1 TO
6:bulb%(L%)=bulb%(L%)-1:IF bulb%(L%)
<1 bulb%(L%)=6
170 NEXT
180 FOR L%=1 TO 6:VDU 19,(L%+8),bulb%
(L%),0,0,0
190 NEXT
200 I=INKEY(20)
210 UNTIL count%=20
220 :
230 REM move right
240 count%=0: REPEAT count%=count%+1
250 FOR L%=1 TO 6:bulb%(L%)=bulb%(L%
)+1:IF bulb%(L%)>6 bulb%(L%)=1
260 NEXT
270 FOR L%=1 TO 6:VDU 19,(L%+8),bulb%
(L%),0,0,0
280 NEXT
290 I=INKEY(20)
300 UNTIL count%=20
310 ENDPROC
320 .
```

The first PROCedure for producing moving lights provides something that no set of Christmas lights can imitate: the colours of the bulbs actually move from one bulb to another! Well, it looks interesting anyway. The second routine is a set of white lights, as an alternative to the colouted variety. Once again, blue is used for bulbs In the 'off' positon:

```
330 DEFPROCdisplay_white
340 REM move left
350 count%=0: REPEAT
count%=count%+1
360 temp%=wbulb%(1):FOR L%=1 TO
5:wbulb%(L%)=wbulb%(L%+1):NEXT:wbulb
%(6)=temp%
370 FOR L%=1 TO 6:VDU 19,(L%+8),wbulb
%(L%),0,0,0
380 NEXT
390 I=INKEY(20)
400 UNTIL count%=20
410 :
420 REM move right
430 count%=0: REPEAT count%=count%+1
440 temp%=wbulb%(6):FOR L%=6 TO 2
STEP-1:wbulb%(L%)=wbulb%(L%-1):NEXT:
wbulb%(1)=temp%
450 FOR L%=1 TO 6.VDU 19,(L%+8),wbulb
%(L%),0,0,0
460 NEXT
470 I=INKEY(20)
480 UNTIL count%=20
490 ENDPROC
500 .
```

The next PROCedure does a more realistic impression of moving lights, turning off two at a time in a left, then right direction:

```
510 DEFPROCdisplay_colour
520 REM move left
530 count%=0: REPEAT count%=count%+1
540 FOR M%=1 TO 6
550 FOR L%=1 TO 6:VDU 19,(L%+8),bulb
%(L%),0,0,0.NEXT
560 VDU 19,(M%+8),4,0,0,0
570 I=INKEY(20)
580 NEXT
590 UNTIL count%=3
600 :
610 REM move right
620 count%=0: REPEAT
count%=count%+1
630 FOR M%=6
TO 1 STEP-1
640 FOR L%=1 TO 6:
VDU 19,(L%+8),bulb%(L%),
0,0,0:NEXT
650 VDU 19,(M%+8),4,0,0,0
660 I=INKEY(20)
670 NEXT
680 UNTIL count%=3
690 ENDPROC
700 :
```

Finaly, the shortest PROCedure, all of the lights flash on and off together. This is by far the easiest PROCedure to implement, altering all of the colours from their present colours to blue, the back again.

```
710 DEFPROCall_flash
720 count%=0: REPEAT count%=count%+1
730 FOR L%=1 TO 6:VDU 19,(L%+8),bulb
%(L%),0,0,0 NEXT
740 I=INKEY(40)
750 FOR L%=1 TO 6:VDU 19,(L%+8),4,0,
0,0:NEXT
760 I=INKEY(30)
770 UNTIL count%=10
780 ENDPROC
```

Any or all of the display PROCedures can be entered, provided the relevant lines 70-100 are entered in association. Each routine plays through for a few seconds, before passing on to the next. At the end of the display PROCedures, the routines are called again. This goes on forever, or until you press ESCAPE.

Although this is not a marvelous example of the BBC's graphice ability, it does show that it's very easy to produce clever effects just by altering the Actual colour values of th Beeb's colour palette

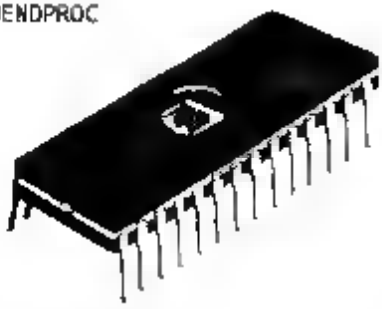
PROCMEM

A memory printout routine by Frank Iveson

Although this program has been designed to produce a printout of your Beeb's memory statistics to a printer, as it stands it will print your Beeb's memory information to the screen. To send the output to your printer, remove the REM details from line 3030.

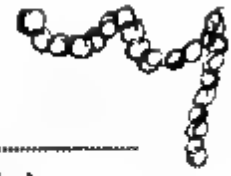
Because of the way the lines are numbered, it is an ideal Procedure to put at the end of a program that you are developing. By calling the procedure up, you will be presented with information about the amount of memory used and how much is left, including other useful values, for instance, Shadow Ram memory. Providing your program doesn't already contain any of these line numbers, it could be Spooled in at a later stage of development.

```
10PROCmem
20CLS
30END
40:
3000DEF PROCmem
3010VDU 22,7
3020:
3030REM VDU2 *** Delete the REM to
produce a printout ***
3040:
3050PRINT''SPC(10)"MEMORY STATIS-
TICS"
3060PRINTSPC(10)"————————"
3070PRINTSPC(10)"All values in HEX"
3080IF HIMEM < &8000 GOTO 3130
3090PRINT'"SCREEN MEMORY..."
3100PRINT'"SHAD.RAM
TOP:"SPC3;~(&CE2 0);SPC3;"SCREEN
MEM: ";~(&CE20-&8000)
3110PRINT"HIMEM:"SPC10;
~HIMEM,SPC3; "(&CE20-HIMEM)"
3120IF HIMEM = &8000 GOTO 3160
3130PRINT''"EXECUTION MEMORY..."
3140PRINT'"RAM TOP:"SPC8;~(&8000);
SPC3;"SCREEN MEM: ";~(&8000-HIMEM)
3150PRINT"HIMEM."SPC10;~HIMEM;
SPC3;"(&8000-HIMEM)"
3160PRINT''"EXECUTION MEMORY..."
3170PRINT'"HIMEM;"SPC10;
~HIMEM,SPC3;"AVAIL MEM. "~HIMEM-
LOMEM
3180PRINT"LOMEM:"SPC10;~LOMEM;SPC3"(
HIMEM-LOMEM)"
3190PRINT''"PROGRAM/VARIABLES STORAG
E MEMORY..."
3200PRINT'"TOP:"SPC12;~TOP;SPC3;"PRO
G SIZE: ";~TOP-PAGE
3210PRINT"PAGE:"SPC11;~PAGE ;SPC3"(
TOP-PAGE)"
3220:
3230VDU3 :REM *** Stops further
printing ***
3240:
3250REPEAT:PRINTTAB (6,24)"Press
SPACE BAR to continue":UNTIL GET=32
3260VDU 22,7
3270ENDPROC
```



How much spare space do you have inside these little things? Run this program and find out!!

MEMORY EDITING #2



by Andrew Bennett, continued from Issue 9

```
740LDA #225
750LDX #&80
760LDY #0
770STY current+1
780STY edittype+1
790JSR osbyte
800STX oldfx225+1
810LDA #226
820LDX #&90
830LDY #0
840JSR osbyte
850STX oldfx226+1
860:
870.me_loop3
880JSR screen
890.me_loop4
900JSR highlight
910JSR osrdch
920BCC me_next0
930JMP me_exit
940.me_next0
950PHA
960JSR unhighlight
970PLA
980CMP #&8C
990BNE me_next1
1000JMP me_left
1010.me_next1
1020CMP #&8D
1030BNE me_next2
1040JMP me_right
1050.me_next2
1060CMP #&8E
1070BNE me_next3
1080JMP me_down
1090.me_next3
1100CMP #&8F
1110BNE me_next4
1120JMP me_up
1130.me_next4
1140CMP #&9E
1150BNE me_next5
1160JMP me_pagedown
1170.me_next5
1180CMP #&9E
1190BNE me_next6
1200JMP me_pageup
1210 me_next6
1220CMP #9
1230BNE me_next7
1240LDA edittype+1
1250EOR #1
1260STA edittype+1
1270BCS me_loop4
1280.me_next7
1290LDX edittype+1
1300BEQ me_ascii
1310SEC
1320SBC #ASC"0"
1330BCC me_loop4
1340CMP #10
1350BCC me_digok
1360SBC #7
1370CMP #16
1380BCC me_digcheck
1390SBC #ASC"a"-ASC"A"
1400.me_digcheck
1410CMP #10
1420BCC me_loop4
1430CMP #16
1440BCS me_loop4
1450.me_digok
1460STA me_or+1
1470JSR writetoread
1480LDX curreht+1
1490JSR read
1500ASL A
1510ASL A
1520ASL A
1530ASL A
1540 me_or
1550ORA #0
1560JSR write
1570JSR thisline
1580JMP me_loop4
1590.me_ascii
1600LDX current+1
1610JSR write
1620JSR thisline
1630:
1640.me_right
1650INC current+1
1660LDA current+1
1670CMP width+1
1680BNE me_jmploop4
1690LDA #0
1700STA current+1
1710.me_down
1720CLC
1730LDA write+1
1740ADC width+1
1750STA write+1
1760BCC me_downdraw
1770INC write+2
1780 me_downdraw
1790LDY height+1
1800JSR left
1810JSR osnewl
1820JSR screenend
1830JSR line
1840 me_jmploop4
1850JMP me_loop4
1860:
1870.me_left
1880DEC current+1
1890BPL
me_jmploop4
```

Memory Editing...

```
1900LDX width+1
1910DEX
1920STX current+1
1930.me_up
1940SEC
1950LDA write+1
1960SBC width+1
1970STA write+1
1980BCS me_updraw
1990DEC write+2
2000.me_updraw
2010JSR topleft
2020LDA #11
2030JSR oswrch
2040JSR screenstart
2050JSR line
2060JMP me_loop4
2070.
2080.me_pagedown
2090JSR screenend
2100JSR readtowrite
2110JMP me_loop3
2120:
2130.me_pageup
2140JSR screenstart
2150JSR readtowrite
2160JMP me_loop3
2170·
2180.write
2190STA &FFFF,X
2200RTS
2210.
2220.me_exit
2230LDA #226
2240 oldfx226
2250LDX #0
2260LDY #0
2270JSR osbyte
2280LDA #225
2290.oldfx225
2300LDX #0
2310LDY #0
2320JSR osbyte
2330LDA #4
2340.oldfx4
2350LDX #0
2360JSR osbyte
2370 cls
2380LDA #12
2390BNE branchwrch
2400:
2410.topleft
2420LDY #0
2430 left
2440LDX #0
2450:
2460 tab
2470LDA #31
2480JSR oswrch
2490TXA
2500JSR oswrch
2510TYA
2520.branchwrch
2530JMP oswrch
2540:
2550.space
2560LDA #32
2570BNE branchwrch
2580:
2590 phex
2600PHA
2610LSR A
2620LSR A
2630LSR A
2640LSR A
2650JSR ph_digit
2660PLA
2670AND #15
2680.ph_digit
2690CMP #10
2700BCC ph_lt10
2710ADC #6
2720 ph_lt10
2730ADC #48
2740BCC branchwrch
2750:
2760.readpos
2770LDA #134
2780JMP osbyte
2790:
2800.readtowrite
2810LDA read+1
2820STA write+1
2830LDA read+2
2840STA write+2
2850RTS
2860.
2870 writetoread
2880LDA write+1
2890STA read+1
2900LDA write+2
2910STA read+2
2920RTS
2930·
2940.screenstart
2950JSR writetoread
2960LDX editline+1
2970.scst_loop1
2980SEC
2990LDA read+1
3000SBC width+1
3010STA read+1
30200CS scst_ndec1
3030DEC read+2
3040.scst_ndec1
30S0DEX
30600NE scst_loop1
3070RTS
3080:
3090.screenend
3100JSR writetoread
3110SEC
3120LDA height+1
3130SBC editline+1
3140TAX
3150.scen_loop1
3160CLC
3170LDA read+1
```

```
3180ADC width+1
3190STA read+1
3200BCC scen_mnc1
3210INC read+2
3220.scen_mnc1
3230DEX
3240BNE scen_loop1
3250RTS
3260:
3270 screen
3280JSR screenstart
3290JSR topleft
3300.height
3310LDY #0
3320.scr_loop1
3330JSR line
3340DEY
3350BMI scr_exit
3360JSR osnewl
3370CLC
3380LDA read+1
3390ADC width+1
3400STA read+1
3410BCC scr_loop1
3420INC read+2
3430JMP scr_loop1
3440.scr_exit
3450RTS
3460:
3470.thisline
3480JSR writetoread
3490LDY editline+1
3500JSR left
3510:
3520.line
3530LDA read+2
3540JSR phex
3550LDA read+1
3560JSR phex
3570JSR space
3580LDX #0
3590.ln_loop1
3600JSR read
3610JSR phex
3620JSR space
3630INX
3640.width
3650CPX #0
3660BNE ln_loop1
3670LDX #0
3680.ln_loop2
3690JSR read
3700CMP #32
3710BCC ln_dot
3720CMP #127
3730BCC ln_ok
3740.ln_dot
3750LDA #ASC"."
3760.ln_ok
3770JSR oswrch
3780INX
3790CPX width+1
3800BNE ln_loop2
3810.read
3820LDA &FFFF,X
3830RTS
3840:
3850 unhighlight
3860LDA #32
3870PHA
3880PHA
3890BNE editline
3900:
3910.highlight
3920.edittype
3930LDX #0
3940BEQ hl_ascii
3950LDA #ASC"]"
3960PHA
3970LDA #ASC"["
3980PHA
3990BNE editline
4000.hl_ascii
4010LDA #ASC")"
4020PHA
4030LDA #ASC"("
4040PHA
4050:
4060.editline
4070LDY #0
4080.current
4090LDA #0
4100ASL A
4110CLC
4120ADC current+1
4130ADC #4
4140TAX
4150JSR tab
4160PLA
4170JSR oswrch
4180TXA
4190CLC
4200ADC #3
4210TAX
4220JSR tab
4230PLA
4240JSR oswrch
4250LDA width+1
4260ASL A
4270CLC
4280ADC width+1
4290ADC #5
4300ADC current+1
4310TAX
4320JMP tab
4330]
4340NEXT
4350ENDPROC
4360.
4370DEF PROCsave
4380OSCLI"SAVE
Medit
"+STR$~code%+"
"+STR$~O%+"
"+STR$~medit+"
"+STR$~dest%
4390ENDPROC
```

THE HISTORY OF ACORN

5TH DECEMBER 1978

Acorn Computers was born, on a kitchen table in a back room. Their first creation was an electronic slot machine.

MARCH 1980

After the Acorn System 1,2, and 3, Acorn launch the first commercial microcomputer - the AFOM.

FEBRUARY 1981

Kenneth Baker, Minister of IT, sponsors the use of computers in Secondary Schools.

APRIL 1981

Acorn wins contract from BBC to provide the PROTON

JANUARY 1982

BBC Microcomputer System launched. Chosen for 7 out of 10 micros bought for UK schools.

SEPTEMBER 1983

Flotations on USM.

APRIL 1984

Acorn wins the Queen's Award for Technology for the BBC Micro.

SEPTEMBER 1985

Olivetti takes controlling interest.

JANUARY 1986

Launch of the Master 128 Series computers

NOVEMBER 1986

Launch of the BBC Domesday System

JUNE 1987

Launch of the Archimedes: the first 32bit RISC based microcomputers under UKP1000.

FEBRUARY 1989

R140 launched: the first UNIX workstation under UKP4000.

MAY 1989

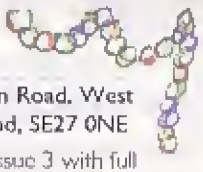
A3000 lanuched:the new BBC Micro.

...and the rest is history!!

COLOUR n See table for values of n

Foreground	Background	MODE 2	MODEs 1,5	MODEs 0,3,4,6
0	128	Black	Black	Black
1	129	Red	Red	White
2	130	Green	Yellow	
3	131	Yellow	White	
4	132	Blue		
5	133	Magenta		
6	134	Cyan		
7	135	White		
8	136	Black-White (flashing)		See VDU19
9	137	Red-Cyan (flashing)		to alter
10	138	Green-Magenta (flashing)		default
11	139	Yellow-Blue (flashing)		colour
12	140	Blue-Yellow (flashing)		
13	141	Magenta-Green (flashing)		
14	142	Cyan-Red (flashing)		
15	143	White-Black (flashing)		

CLASSIFIEDS



BBC PSU's and keyboards for sale, 3 Master 128's and 100's of educational/games programmes (commercial). If anyone is interested please let me know ASAP as I'm moving and must shift it quick. **Call D.Roberts 0274-596751** (Bradford)

WANTED: 1) Tape-to-Disc transfer utility; 2) 'ELITE' instructions; 3) Solidisc ADFS instruction manual. **Contact Brian: 23 Howard Close, Royal Oak, Newport, Gwent NP9 9FR**

WANTED for hard-working BBC: a double sided, double density, twin disc drive unit (drives side by side) incorporating own PSU. Please **Contact Paul on 0992-652066** (evenings), or write to **ByteBack at the address below!**

FOR SALE:
1000's of surplus components, modern, new, unused: resistors, capacitors, boards to dismantle, key-operated switches, 3 volt Lithium cells etc. Anyone interested in Electronics/Ham Radio should not miss this! Send stamp for list; **Two BBC B keyboards,** used but perfect. FREE. Just order one and send me the postage afterwards. Connector included.
2 position miniature toggle switch for BBC Master. Just plugs in – no soldering. Switch between Ram & Eprom £1;
Aries B32 Sideways Ram board for BBC Micro £20; **ATPL Sideways** Eprom board for the BBC B PLUS only. £20; 1200/75 modem - BBC ready with connections - £20.
Satellite TV. I can supply ANYTHING from dishes, receivers, down to LNB or components for the receiver. Ask for Satellite price list, send stamp; **"Understanding Inter-Word"** book just £6.50 inc. My famous "Inter-Base Programming Guide" for £14.95 inclusive. Special offer to Byte-Back members: send me a formatted disc (80T any size, any format) and I will copy my Examples Disc onto it (normally £2 extra). **Contact: M T Pickering, 10 Bollin Close, Sandbach, Cheshire. CW11 9TZ. 0270 761928 (eves) 0589 355411 (mobile)**

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FOR SALE: Beebug magazines:- Vol 1, Nos 9,10; Vol 2, Nos 7,9,10; Vol 3, Nos 1,2,3,5; Vol 4, Nos 8,9,10; Vol 5, nos 1,2; Vol 6, Nos 4,5,6,7,8,9,10; Vol 7, No 2; Vol 10, No 1; Vol 11, No 10; Swap for above, or sell for 20p each+ 19p per issue p&p. **Contact Lorna Jenne, 53 Uffington Road, West Norwood, SE27 0NE**

BBC B Issue 3 with full height 40tk opus 5¼ drive, GWO, £60. **Call 0666 860577**

BBC B, dual Ahkter drives (40/80) in plinth, Philips monitor, sideways Ram board and some software, £160. **Call 0582 562508**

BBC Computer. 128k Rom/Ram board, dual ds disc drives, Opus D DOS, Viewspell, View, Viewsheet, View printer driver, Max, Sideways ZIF socket, Acorn monitor, Bridge unit, Panasonic printer, joystick, mouse, manuals, much software, superb condition. £125. **Call 0476 79972**

BBC B with Torch Z80 upgrade. Complete with built in twin 5.25" disc drives. Excellent condition. Only £47 as space needed. **Contact John 0733 203666, Peterborough. Buyer collects.**

BBC software. Over 200 games, plus other software, all on 80-track discs. £25 the lot. **Call 0934 623506. Weston Super Mare.**

BBC Master 128k Cumana disc drive, software both games and educational. £100. **Call 081 994 7400 after 4.30pm.**

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